

## REMARKS

Claims 19-23 and 25-29 remain pending in the application. Claims 24 and 30 have been canceled without prejudice or disclaimer. Claims 19, 22, 25, and 28 have been amended without introduction of new matter. Favorable reconsideration is respectfully requested in view of the above amendments and the following remarks.

Claims 22 and 28 stand rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite. This rejection is respectfully traversed.

The basis for the Office's objection is the recitation, in each of claims 22 and 28, of "... slots in the frame, wherein RTT is ...." (Emphasis added.) In response, each of independent claims 19 and 25 has been amended to, *inter alia*, define "upstream frames", and dependent claims 22 and 28 have each been amended to now expressly refer to these "upstream frames." Support for these amendments can be found in the original application at, for example, page 7, lines 9-16.

It is believed that these amendments address all of the Office's concerns. Accordingly, it is respectfully requested that the rejection of claims 22 and 28 under 35 U.S.C. §112, second paragraph be withdrawn.

Claims 19-30 stand rejected under 35 U.S.C. §102(e) as allegedly being anticipated by US Patent No. 6,785,252 to Zimmerman et al. (henceforth "Zimmerman"). This rejection is respectfully traversed.

Independent method claim 19 has been amended to further define "dividing a communication from each one of said terminals to the master controller into upstream frames; ...; at each slave element at level  $N$ , aggregating flows according to said flows categories and, at each polling period, sending aggregate bandwidth requests to the corresponding master element at level  $N$ , said requests comprising, for each category, aggregate queue status of the active connections and aggregate guaranteed rate equal to the sum of the guaranteed rates of the connections that have at least one cell in the corresponding queue in the slave element; and at each master element and at each polling time period, integrating the aggregate guaranteed rate over a time window of length  $IT$ , where  $IT$  is an integer multiple of the polling time period, so as to dynamically adjust the guaranteed quote for each slave element." (Emphasis added.)

Thus, amended claim 19 corresponds to subject matter defined by previous claims 19 and 24 as well as subject matter found in the application at, for example, page 9, lines 10-11; page 22, lines 21-22; page 23, lines 3-7; and page 24, lines 13-17.

Independent apparatus claim 25 has been similarly amended. Dependent claims 24 and 30 have been canceled without prejudice or disclaimer to accommodate the amendments to their respective base claims 19 and 25.

As now amended, independent claims 19 and 25 are even more focused on methods and apparatuses in which, for each service category, a couple of parameters including the queue status and the aggregate guaranteed rate are sent from the slave terminal to the corresponding master element. At each master element and at each polling time period, the aggregate guaranteed rate is integrated over a time window of length  $IT$ , where  $IT$  is an integer multiple of the polling time period  $T$ .

Therefore, during an integration time, the permits requested by a terminal are served as guaranteed until the number of served cells reaches the amount that can be transferred as granted during the current  $IT$ , according to the aggregate rate communicated by the terminal. Requests exceeding the limit can be handled only as excess traffic. In this way a simple boundary between guaranteed and excess traffic can be defined on a terminal basis. The limit bounding the guaranteed quote refers to a time frame given by  $IT=k \cdot T$ , but is updated on each polling period  $T$  so as to allow a dynamic adjusting of the guaranteed quote to the actual needs of each terminal.

The prior art of record fails to disclose or even suggest the combination of features defined by independent claims 19 and 25. In particular, Zimmerman discloses, in column 7, lines 49-53, that the base station allocates a fixed bandwidth depending on the quality of service ("QoS"); that is, without taking into account the actual bandwidth requests resulting from an aggregate guaranteed rate output from each Customer Premises Equipment ("CPE"). Zimmerman would not have provided any suggestion to the person of ordinary skill in the art that the CPEs should be modified so as to provide the base station, for each service category, with a couple of parameters including the queue status and the aggregate guaranteed rate. Nor would Zimmerman have suggested that the base station should be modified so as to integrate, at each polling period, the aggregate guaranteed rate over a time window of length multiple of the polling time period,  $T$ , for dynamically adjusting the guaranteed quote to the actual needs of each CPE.

For at least the above reasons, the subject matter defined by independent claims 19 and 25, as well as that of the respective dependent claims 20-23 and 26-29, is believed to be patentably distinguishable over the prior art of record. It is therefore respectfully requested that the rejection of claims 19-23 and 25-29 under 35 U.S.C. §102(e) be withdrawn.

The application is now believed to be in immediate condition for allowance. Prompt notice of same is respectfully requested.

Respectfully submitted,  
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